# **Swampscott Contributory Retirement System**

Actuarial Valuation and Review as of January 1, 2006

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January 25, 2007

Retirement Board Swampscott Contributory Retirement System 25 Railroad Avenue, Suite 4C Swampscott, MA 01907

Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of January 1, 2006. It summarizes the actuarial data used in the valuation, establishes the funding requirements for fiscal 2007 and later years and analyzes the preceding two years' experience.

The census information and financial information on which our calculations were based was prepared by the Swampscott Contributory Retirement System. That assistance is gratefully acknowledged. The actuarial calculations were completed under my supervision.

This actuarial valuation has been completed in accordance with generally accepted actuarial principles and practices. To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Board are reasonably related to the experience of and the expectations for the Plan.

We look forward to reviewing this report at your next meeting and to answering any questions.

Sincerely,

THE SEGAL COMPANY

By:

Kathleen A. Riley, FSA, MAAA, EA
Senior Vice President and Actuary

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#### **Purpose**

This report has been prepared by The Segal Company to present a valuation of the Swampscott Contributory Retirement System as of January 1, 2006. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits. The contribution requirements presented in this report are based on:

- > The benefit provisions of M.G.L. Chapter 32;
- > The characteristics of covered active participants, inactive participants, and retired participants and beneficiaries as of January 1, 2006;
- > The assets of the Plan as of December 31, 2005;
- > Economic assumptions regarding future salary increases and investment earnings; and
- > Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

#### **Significant Issues in Valuation Year**

The following key findings were the result of this actuarial valuation:

- > The actuarial valuation report as of January 1, 2006 is based on financial information as of that date. Changes in the value of assets subsequent to that date, to the extent that they exist, are not reflected.
- > During the plan years ended 2004 and 2005, the market value of return was 10.26% and 8.09%, respectively. Because the actuarial value of assets gradually recognizes market value fluctuations, the actuarial rate of return for the plan years ended 2004 and 2005 was 6.28% and 6.58%, respectively. The actuarial value of assets as of December 31, 2005 of \$30.5 million represents 105.7% of the market value of assets.
- As indicated in Section 2, Subsection B of this report, the total unrecognized investment loss as of December 31, 2005 is \$1.7 million. This investment loss will be recognized in the determination of the actuarial value of assets for funding purposes in the next few years, to the extent it is not offset by recognition of investment gains derived from future experience. This implies that earning the assumed rate of investment return of 8.00% per year (net of expenses) on a market value basis will result in investment losses on the actuarial value of assets in the next few years. Therefore, if the actual market return is equal to the assumed 8.00% rate and all other actuarial assumptions are met, the contribution requirement will increase more than expected when the next valuation is completed.

- > The unfunded liability has increased from \$24.1 million as of January 1, 2004 to \$27.6 million as of January 1, 2006. The unfunded liability was expected to increase to \$24.9 million. The additional increase is due to an experience loss as discussed in Section 2, Subsection C.
- > This valuation reflects the following:
  - > The administrative expense assumption was increased from \$160,000 for calendar 2004 to \$175,000 for calendar year 2006.
  - > The mortality table for healthy participants was changed from the 1983 Group Annuity Mortality Table to the RP-2000 Combined Healthy Table.
  - > The mortality table for disabled participants was changed from the 1983 Group Annuity Morality Table set forward 10 years to the RP-2000 Combined Healthy Table set forward five years.
  - > For Group 1 participants, the salary increase assumption has been changed to 3.5% for 2006, 4.0% for 2007, 4.5% for 2008 and 5.0% per year. For Group 4 participants, the assumption has been changed to 5.0% per year. The previous assumption was 5.5% per year for all participants.
  - > In 2004, the Public Employee Retirement Administration Commission approved a new mortality table and interest rate to be used in the calculation of the optional form of payment factors. This valuation reflects the change to the new factors.
  - This valuation reflects the additional liability due to the increased benefits for veterans who retire on an accidental disability.
  - > These changes resulted in a net increase in the unfunded liability of \$989,669 and a decrease in the employer normal cost of \$81,714.
- > Because the fiscal 2007 appropriation has been previously budgeted amount at \$2,669,120 based on the January 1, 2004 actuarial valuation, the results of this valuation will first be reflected in the fiscal 2008 appropriation of \$2,905,395 (8.85% higher than 2007). The current funding schedule amortizes the unfunded liability by June 30, 2028 with amortization payments that increase 4.50% per year (shorter, level dollar amortization of the 2002 and 2003 ERI liabilities).

> Based on September 30, 2006 payroll data, the 2008 appropriation is allocated as follows:

	Percent of Payroll	Appropriation (excluding ERIs)	2002 ERI	2003 ERI	Total
Town	93.12%	\$2,545,715	\$126,396	\$40,333	\$2,712,444
Water	2.84%	77,640			77,640
Sewer	3.31%	90,489			90,489
Housing Authority	0.73%	<u>19,957</u>	<u>4,865</u>	<u></u> -	<u>24,822</u>
	100.00%	\$2,733,801	\$131,261	\$40,333	\$2,905,395

SECTION 1: Valuation Summary for the Swampscott Contributory Retirement System

	2006	2004
Contributions for fiscal year beginning July 1:		
Recommended for 2006 and 2004	\$2,669,120	\$2,347,756
Recommended for 2007 and 2005	2,905,395	2,561,571
Recommended for 2008 and 2006	3,028,416	2,669,120
Funding elements for plan year beginning January 1:		
Normal cost, including administrative expenses	\$1,755,571	\$1,637,589
Market value of assets	28,839,050	25,948,723
Actuarial value of assets	30,492,424	28,721,832
Actuarial accrued liability	58,082,162	52,826,739
Unfunded actuarial accrued liability	27,589,738	24,104,907
GASB 25/27:		
Annual required contributions	\$2,669,120	\$2,347,756
Actual contributions		2,347,756
Percentage contributed		100.00%
Funded ratio	52.50%	54.37%
Demographic data for plan year beginning January 1:		
Number of retired participants and beneficiaries	225	229
Number of inactive participants	215	206
Number of active participants	282	263
Total payroll	\$9,629,299	\$8,587,764
Average payroll	34,146	32,653

#### A. PARTICIPANT DATA

The Actuarial Valuation and Review considers the number and demographic characteristics of covered participants, including active participants, inactive participants, retired participants and beneficiaries. This section presents a summary of significant statistical data on these participant groups.

More detailed information for this valuation year and the preceding valuation can be found in Section 3, Exhibits A and B.

A historical perspective of how the participant population has changed over the past seven valuations can be seen in this chart.

CHART 1
Participant Population: 1993 – 2005

Year Ended December 31	Active Participants	Inactive Participants*	Retired Participants and Beneficiaries
1993	254	N/A	199
1995	269	3	198
1997	260	123	212
1999	277	1	207
2001	267	172	211
2003	263	206	229
2005	282	215	225

<sup>\*</sup> Excludes inactive participants due a refund of employee contributions in 1995 and 1999.

## **Active Participants**

Plan costs are affected by the age, years of service and payroll of active participants. In this year's valuation, there were 282 active participants with an average age of 44.8, average years of service of 9.6 years and average payroll of \$34,146. The 263 active participants in the prior valuation had an average age of 43.1, average service of 9.2 years and average payroll of \$32,653.

Among the active participants, there were none with unknown age and/or service information.

## **Inactive Participants**

In this year's valuation, there were 215 participants with a vested right to a deferred or immediate vested benefit or entitled to a return of their employee contributions.

These graphs show a distribution of active participants by age and by years of service.

CHART 2
Distribution of Active Participants by Age as of December 31, 2005

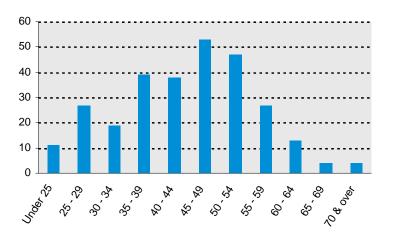
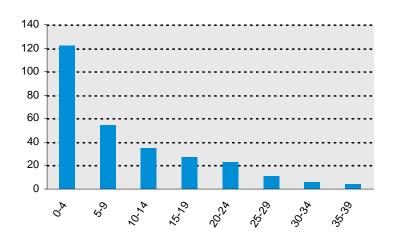


CHART 3

Distribution of Active Participants by Years of Service as of December 31, 2005



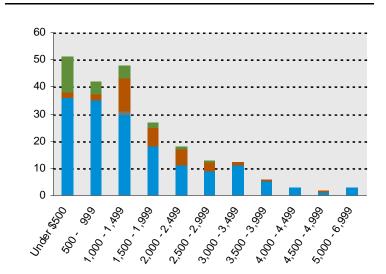
# **Retired Participants and Beneficiaries**

As of December 31, 2005, 198 retired participants and 27 beneficiaries were receiving total monthly benefits of \$328,577, excluding COLAs reimbursed by the Commonwealth. For comparison, in the previous valuation, there were 202 retired participants and 27 beneficiaries receiving monthly benefits of \$302,522, excluding COLAs reimbursed by the Commonwealth.

These graphs show a distribution of the current retired participants and beneficiaries based on their monthly amount and age, by type of pension.

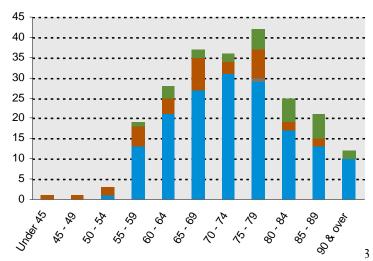
BeneficiariesAccidental DisabilityOrdinary Disability

# CHART 4 Distribution of Retired Participants and Beneficiaries by Type and by Monthly Amount as of December 31, 2005



# CHART 5

Distribution of Retired Participants and Beneficiaries by Type and by Age as of December 31, 2005



Superannuation

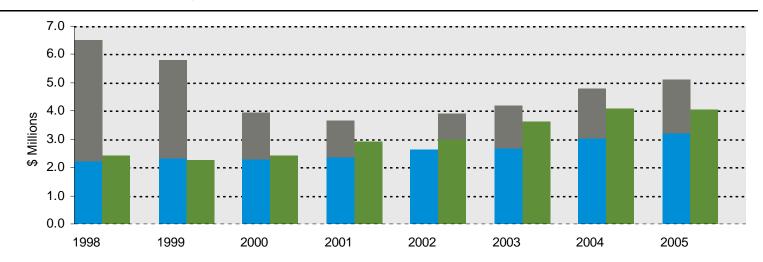
#### **B. FINANCIAL INFORMATION**

Retirement plan funding anticipates that, over the long term, both net contributions (less administrative expenses) and net investment earnings (less investment fees) will be needed to cover benefit payments. Retirement plan assets change as a result of the net impact of these income and expense components. Additional financial information, including a summary of these transactions for the valuation year, is presented in Section 3, Exhibits C and D.

The chart depicts the components of changes in the actuarial value of assets over the last eight years. Note: The first bar represents increases in assets during each year while the second bar details the decreases.

Net investment incomeBenefits paidNet contributions

CHART 6
Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended December 31, 1998 – 2005



It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Board has approved an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable.

The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

The chart shows the determination of the actuarial value of assets as of the valuation date.

CHART 7

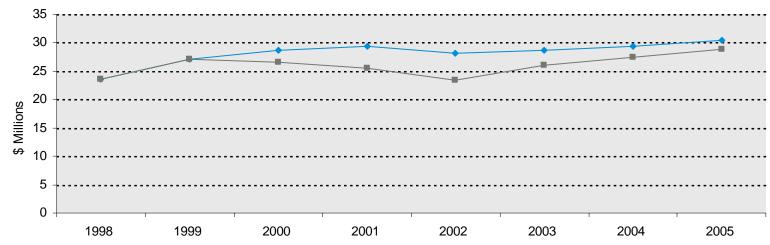
Determination of Actuarial Value of Assets

	Year Ended		
	December 31, 2005	December 31, 2004	
1. Actuarial value of assets at the beginning of the year	\$29,443,660	\$28,721,832	
2. Contributions, less benefit payments and expenses during the year	-859,024	-1,049,951	
3. Average actuarial value: (1) + [50% of (2)]	29,014,148	28,196,857	
4. Expected investment income: .08 x (3)	2,321,132	2,255,749	
5. Preliminary actuarial value of assets at the end of the year: $(1) + (2) + (4)$	30,905,768	29,927,630	
6. Market value of assets at the end of the year	28,839,050	27,507,782	
7. Adjustment toward market value: 20% of [(6) - (5)]	-413,344	-483,970	
8. Adjustment to be within 20% corridor	0	0	
9. Final actuarial value of assets: $(5) + (7) + (8)$	<u>\$30,492,424</u>	<u>\$29,443,660</u>	
10. Actuarial value as a percentage of market value: (9) ÷ (6)	105.7%	107.0%	

Both the actuarial value and market value of assets are representations of the Swampscott Contributory Retirement System's financial status. As investment gains and losses are gradually taken into account, the actuarial value of assets tracks the market value of assets. The actuarial asset value is significant because the Swampscott Contributory Retirement System's liabilities are compared to these assets to determine what portion, if any, remains unfunded. Amortization of the unfunded actuarial accrued liability is an important element in determining the contribution requirement.

This chart shows the change in the actuarial value of assets versus the market value over the past eight years. Market value of assets equal to actuarial value of assets prior to 2000.

# CHART 8 Actuarial Value of Assets vs. Market Value of Assets as of December 31, 1998 – 2005



#### C. ACTUARIAL EXPERIENCE

To calculate the required contribution, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. If overall experience is more favorable than anticipated (an actuarial gain), the contribution requirement will decrease from the previous year. On the other hand, the contribution requirement will increase if overall actuarial experience is less favorable than expected (an actuarial loss).

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single year's experience was a short-term

development and that, over the long term, experience will return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience.

If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years.

The total loss over the past two years was \$1,748,965. A discussion of the major components of the actuarial experience is on the following pages.

This chart provides a summary of the actuarial experience over the past two years.

# CHART 9

# Actuarial Experience for Two-Year Period Ended December 31, 2005

1.	Net loss from investments*	-\$897,314
2.	Net gain from administrative expenses	49,798
3.	Net loss from other experience**	<u>-901,449</u>
4.	Net experience loss: $(1) + (2) + (3)$	-\$1,748,965

<sup>\*</sup> Details in Chart 10

<sup>\*\*</sup> Details in Chart 13

#### **Investment Rate of Return**

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on the Swampscott Contributory Retirement System's investment policy. For valuation purposes, the assumed rate of return on the actuarial value of assets is 8.00%. The actual rate of return on an actuarial basis for the 2005 plan year was 6.58% and 6.28% for the 2004 year.

Since the actual return for the year was less than the assumed return, the Swampscott Contributory Retirement System experienced an actuarial loss during the two-year period ending December 31, 2005 with regard to its investments.

This chart shows the gain/(loss) due to investment experience.

# CHART 10 Actuarial Value Investment Experience

	Year Ended		
	December 31, 2005	December 31, 2004	
1. Actual return	\$1,907,788	\$1,771,779	
2. Average value of assets	29,014,148	28,196,857	
3. Actual rate of return: $(1) \div (2)$	6.58%	6.28%	
4. Assumed rate of return	8.00%	8.00%	
5. Expected return: (2) x (4)	\$2,321,132	\$2,255,749	
6. Actuarial gain/(loss): (1) – (5)	<u>-\$413,344</u>	<u>-\$483,970</u>	

Because actuarial planning is long term, it is useful to see how the assumed investment rate of return has followed actual experience over time. The chart below shows the rate of return on an actuarial basis compared to the market value investment return for the last eight years, including five-year and eight-year averages. Based upon this experience and future expectations, we have maintained the assumed rate of return of 8.00%.

CHART 11
Investment Return – Actuarial Value vs. Market Value: 1998 - 2005

	Actuarial Value Inves	Actuarial Value Investment Return		Market Value Investment Return		
Year Ended December 31	Amount	Percent	Amount	Percent		
1998	\$4,297,495	22.13	\$4,297,495	22.13		
1999	3,490,976	14.77	3,490,976	14.77		
2000	1,642,469	6.06	-455,416	-1.68		
2001	1,304,282	4.59	-467,165	-1.78		
2002	-884,472	-3.03	-1,708,473	-6.73		
2003	1,521,150	5.50	3,441,376	14.97		
2004	1,771,779	6.28	2,609,010	10.26		
2005	<u>1,907,788</u>	6.58	2,190,291	8.09		
Total	\$15,051,467		\$13,398,094			
	Five-year average return	3.94%		4.77%		
	Eight-year average return	7.08%		6.79%		

Note: Each year's yield is weighted by the average asset value in that year.

Subsection B described the actuarial asset valuation method that gradually takes into account fluctuations in the market value rate of return. The effect of this is to stabilize the actuarial rate of return, which contributes to leveling pension plan costs.

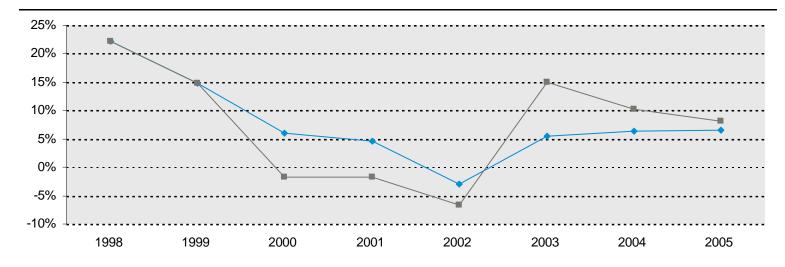
## **Administrative Expenses**

Administrative expenses for the years ended December 31, 2004 and 2005 were \$148,550 and \$132,541, respectively, compared to the assumption of \$160,000 in 2004 and \$167,200 in 2005. This resulted in a gain of \$49,798 for the two-year period, including an adjustment for interest. The administrative expense assumption for 2006 has been increased to \$175,000.

This chart illustrates how this leveling effect has actually worked over the years 1998 - 2005.

CHART 12

Market and Actuarial Rates of Return for Years Ended December 31, 1998 - 2005



#### Other Experience

There are other differences between the expected and the actual experience that appear when the new valuation is compared with the projections from the previous valuation. These include:

- > the extent of turnover among the participants,
- > retirement experience (earlier or later than expected),
- mortality (more or fewer deaths than expected),
- > the number of disability retirements, and
- > salary increases different than assumed.

The net loss from this other experience for the two-year period ending December 31, 2005 amounted to \$901,449 which is 1.6% of the actuarial accrued liability. Detail is shown in the chart below.

This valuation reflects the following:

- > The administrative expense assumption was increased from \$160,000 for calendar 2004 to \$175,000 for calendar year 2006.
- > The mortality table for healthy participants was changed from the 1983 Group Annuity Mortality

Table to the RP-2000 Combined Healthy Table.

- The mortality table for disabled participants was changed from the 1983 Group Annuity Morality Table set forward 10 years to the RP-2000 Combined Healthy Table set forward five years.
- > For Group 1 participants, the salary increase assumption has been changed to 3.5% for 2006, 4.0% for 2007, 4.5% for 2008 and 5.0% per year. For Group 4 participants, the assumption has been changed to 5.0% per year. The previous assumption was 5.5% per year for all participants.
- In 2004, the Public Employee Retirement Administration Commission approved a new mortality table and interest rate to be used in the calculation of the optional form of payment factors. This valuation reflects the change to the new factors.
- > This valuation reflects the additional liability due to the increased benefits for veterans who retire on an accidental disability.

These changes resulted in a net increase in the unfunded liability of \$989,669 and a decrease in the employer normal cost of \$81,714.

The chart shows elements of the experience gain/(loss) for the most recent years.

#### **CHART 13**

# Experience Due to Changes in Demographics for Two-Year Period Ended December 31, 2005

1. Mortality experience among retired members and beneficiaries	-\$600,113
2. Previously inactive participants retiring on disability	-366,050
3. Salary increase for continuing actives less than expected	503,048
4. Miscellaneous loss	<u>-438,334</u>
5. Net gain/(loss)	-\$901,449

#### D. RECOMMENDED CONTRIBUTION

The amount of annual contribution required to fund the Plan is comprised of an employer normal cost payment and a payment on the unfunded actuarial accrued liability.

The preliminary recommended contribution for fiscal 2007 of \$2,780,220 amortizes the 2002 ERI in level payments over 13 years, the 2003 ERI in level payments over 14 years and the remaining unfunded liability over 22 years in increasing (4.50% per year) payments. Under this schedule, the System will be fully funded as of June 30, 2028. The fiscal 2007 appropriation has been set to the previously

budgeted amount of \$2,669,120 determined with the 2004 valuation. Therefore, the impact of this valuation will first be reflected in the fiscal 2008 appropriation of \$2,905,395.

Exhibit G in Section 3 shows the recommended contribution through fiscal 2028 based on this funding schedule.

The chart compares this valuation's recommended contribution with the prior valuation.

# CHART 14 Recommended Contribution

	Year Beginning January 1				
	2006		2004		
	Amount	% of Payroll	Amount	% of Payroll	
1. Total normal cost	\$1,580,571	15.79%	\$1,477,589	16.34%	
2. Administrative expenses	175,000	1.75%	160,000	1.77%	
3. Expected employee contributions	<u>-875,792</u>	<u>-8.75%</u>	<u>-767,266</u>	<u>-8.48%</u>	
4. Employer normal cost: $(1) + (2) + (3)$	\$879,779	8.79%	\$870,323	9.62%	
5. Actuarial accrued liability	58,082,162		52,826,739		
6. Actuarial value of assets	30,492,424		28,721,832		
7. Unfunded actuarial accrued liability: (5) - (6)	\$27,589,738		\$24,104,907		
8. Employer normal cost projected to July 1, 2004 and 2002	899,356	8.79%	889,690	9.62%	
9. Projected unfunded actuarial accrued liability	28,672,097		25,050,554		
10. Payment on projected unfunded actuarial accrued liability	1,880,864	18.38%	1,530,408	17.46%	
11. Preliminary recommended contribution: (8) + (10)*	\$2,780,220	<u>27.17%</u>	\$2,420,098	<u>26.18%</u>	
12. Budgeted appropriation	\$2,669,120	26.08%	\$2,347,756	<u>25.39%</u>	
13. Projected payroll	\$10,234,165		\$9,245,588		

<sup>\*</sup>Recommended contributions are assumed to be paid on July 1.

#### **Reconciliation of Recommended Contribution**

The chart below details the changes in the preliminary recommended contribution from the prior valuation to the current year's valuation.

The chart reconciles the preliminary recommended contribution from the prior valuation to the amount determined in this valuation.

# CHART 15 Reconciliation of Preliminary Recommended Contribution from July 1, 2004 to July 1, 2006

Preliminary Recommended Contribution as of July 1, 2004	\$2,420,098
Expected increase	\$249,022
Effect of increase in veteran's allowances for accidental disability retirees	1,510
Effect of mortality experience among retired members and beneficiaries	39,202
Effect of previously inactive participants retiring on disability	23,912
Effect of salary increases less than expected	-32,861
Effect of investment loss	58,616
Effect of change in actuarial assumptions	-20,393
Effect of net other changes	41,114
Total change	<u>\$360,122</u>
Preliminary Recommended Contribution as of July 1, 2006	<u>\$2,780,220</u>

#### E. INFORMATION REQUIRED BY THE GASB

Governmental Accounting Standards Board (GASB) reporting information provides standardized information for comparative purposes of governmental pension plans. This information allows a reader of the financial statements to compare the funding status of one governmental plan to another on relatively equal terms.

Critical information to the GASB is the historical comparison of the GASB required contribution to the actual contributions. This comparison demonstrates whether a plan is being funded within the range of the GASB reporting requirements. Chart 16 below presents a graphical representation of this information for the Plan.

The other critical piece of information regarding the Plan's financial status is the funded ratio. This ratio compares the

actuarial value of assets to the actuarial accrued liabilities of the plan as calculated under the GASB. High ratios indicate a well-funded plan with assets sufficient to pay most benefits. Lower ratios may indicate recent changes to benefit structures, funding of the plan below actuarial requirements, poor asset performance, or a variety of other factors.

Although the GASB requires that the actuarial value of assets be used to determine the funded ratio, Chart 17 shows the funded ratio calculated using both the actuarial value of assets (52.50%) and the market value of assets (49.65%).

The details regarding the calculations of these values and other GASB numbers may be found in Section 4, Exhibits II, III, and IV.

These graphs show key GASB factors.

CHART 16
Required Versus Actual Contributions

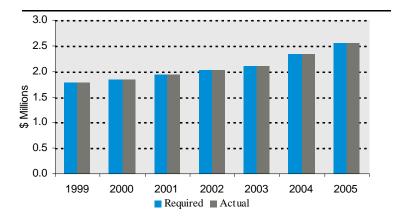
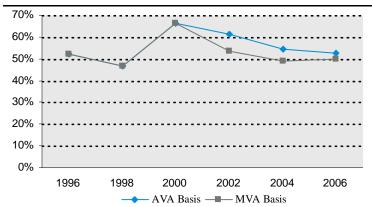


CHART 17 Funded Ratio



SECTION 3: Supplemental Information for the Swampscott Contributory Retirement System

EXHIBIT A

Table of Plan Coverage

	Year Ended		
Category	2005	2003	– Change From Prior Year
Active participants in valuation:			
Number	282	263	7.2%
Average age	44.8	43.1	N/A
Average service	9.6	9.2	N/A
Total payroll	\$9,629,299	\$8,587,764	12.1%
Average payroll	34,146	32,653	4.6%
Member contributions	7,068,164	5,955,630	18.7%
Inactive participants with a vested right to a return of their employee contributions or a deferred or immediate benefit	215	206	4.4%
Retired participants:			
Number in pay status	162	166	-2.4%
Average age	73.0	72.7	N/A
Average monthly benefit	\$1,499	\$1,327	13.0%
Disabled participants:			
Number in pay status	36	36	0.0%
Average age	67.9	67.1	N/A
Average monthly benefit	\$1,786	\$1,705	4.8%
Beneficiaries in pay status	27	27	0.0%

SECTION 3: Supplemental Information for the Swampscott Contributory Retirement System

EXHIBIT B
Participants in Active Service as of December 31, 2005
By Age, Years of Service, and Average Payroll

				Ye	ears of Servi	ice			
Age	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39
Under 25	11	10	1						
	\$20,049	\$20,498	\$15,558						
25 - 29	27	22	5						
	\$25,110	\$26,430	\$19,305						
30 - 34	19	11	5	3					
	\$37,168	\$27,475	\$44,861	\$59,887					
35 - 39	39	17	8	12	1	1			
	\$39,778	\$29,409	\$38,796	\$54,862	\$66,884	\$15,771			
40 - 44	38	19	7	4	5	3			-
	\$37,310	\$33,945	\$27,412	\$44,694	\$48,296	\$53,559			
45 - 49	53	23	11	4	5	9	1		
	\$33,180	\$23,464	\$25,639	\$32,865	\$44,718	\$51,907	\$114,600		
50 - 54	47	11	11	7	5	6	7		
	\$34,537	\$20,663	\$28,068	\$28,219	\$36,254	\$40,183	\$66,759		
55 - 59	27	5	2	4	9	1	1	5	
	\$38,613	\$38,383	\$30,869	\$35,809	\$32,217	\$55,620	\$70,106	\$45,997	
60 - 64	13	2	3	1	1	2		1	3
	\$37,155	\$17,606	\$31,501	\$39,020	\$38,124	\$37,644		\$35,048	\$55,273
65 - 69	4	2	1				1		-
	\$19,801	\$18,865	\$34,559				\$6,915		_
70 & over	4				1	1	1		1
	\$17,240				\$15,558	\$12,256	\$25,851		\$15,295
Total	282	122	54	35	27	23	11	6	4
	\$34,146	\$26,766	\$30,004	\$43,658	\$39,143	\$44,690	\$62,253	\$44,172	\$45,279

# SECTION 3: Supplemental Information for the Swampscott Contributory Retirement System

EXHIBIT C
Summary Statement of Income and Expenses on an Actuarial Value Basis

	Year Ended Dece	mber 31, 2005	Year Ended Dece	ember 31, 2004
Contribution income:				
Employer contributions	\$2,561,571		\$2,347,756	
Employee contributions	769,345		825,475	
Less administrative expenses	<u>-132,541</u>		<u>-148,550</u>	
Net contribution income		\$3,198,375		\$3,024,681
Investment income:				
Interest, dividends and other income	\$2,408,417		\$2,834,902	
Adjustment toward market value	-282,504		-837,232	
Less investment fees	<u>-218,125</u>		<u>-225,891</u>	
Net investment income		1,907,788		<u>1,771,779</u>
Total income available for benefits		\$5,106,163		\$4,796,460
Less benefit payments:				
Pensions and annuities	-\$3,905,722		-\$3,854,257	
Net 3(8)c reimbursements	-135,952		-150,000	
Refunds to members	<u>-15,725</u>		<u>-70,375</u>	
Net benefit payments		-\$4,057,399		-\$4,074,632
Change in reserve for future benefits		\$1,048,764		\$721,828

SECTION 3: Supplemental Information for the Swampscott Contributory Retirement System

EXHIBIT D

Development of the Fund Through December 31, 2005

Year Ended December 31	Employer Contributions	Employee Contributions	Net Investment Return*	Administrative Expenses	Benefit Payments	Actuarial Value of Assets at End of Year
1998	\$1,664,516	\$620,318	\$4,297,495	\$76,345	\$2,434,294	\$23,606,411
1999	1,772,327	624,534	3,490,976	75,171	2,268,512	27,150,564
2000	1,845,975	538,301	1,642,469	101,043	2,410,862	28,665,403
2001	1,932,401	596,448	1,304,282	162,353	2,906,921	29,429,260
2002	2,022,976	735,223	-884,472	135,889	3,007,094	28,160,004
2003	2,114,983	691,180	1,521,151	142,542	3,622,944	28,721,832
2004	2,347,756	825,475	1,771,779	148,550	4,074,632	29,443,660
2005	2,561,571	769,345	1,907,788	132,541	4,057,399	30,492,424

<sup>\*</sup> Net of investment fees

SECTION 3: Supplemental Information for the Swampscott Contributory Retirement System

EXHIBIT E

Development of Unfunded Actuarial Accrued Liability

	Year Ended				
	<b>December 31, 2005</b>	<b>December 31, 2004</b>			
Unfunded actuarial accrued liability at beginning of year	\$24,504,177	\$24,104,907			
2. Normal cost at beginning of year	1,711,281	1,637,589			
3. Total contributions	-3,330,916	-3,173,231			
4. Interest					
(a) For whole year on $(1) + (2)$	\$2,097,237	\$2,059,400			
(b) For half year on (3)	<u>-130,674</u>	<u>-124,488</u>			
(c) Total interest	<u>1,966,563</u>	<u>1,934,912</u>			
5. Expected unfunded actuarial accrued liability	\$24,851,105	\$24,504,177			
6. Changes due to:					
(a) Investment loss	\$897,314				
(b) Assumption changes	966,547				
(c) Veteran's allowance for accidental disability retirees	23,122				
(d) Miscellaneous loss	<u>851,650</u>				
(e) Total changes	<u>2,738,633</u>	<u>-</u>			
7. Unfunded actuarial accrued liability at end of year	<u>\$27,589,738</u>				

SECTION 3: Supplemental Information for the Swampscott Contributory Retirement System

EXHIBIT F

Table of Amortization Bases as of July 1, 2006

Туре	Annual Payment	Years Remaining	Outstanding Balance
2002 ERI	\$131,261	13	\$1,120,458
2003 ERI	40,333	14	359,119
Remaining liability	<u>1,709,270</u>	22	<u>27,192,520</u>
Total	\$1,880,864		\$28,672,097

Notes: ERI payments are level amounts; payment on remaining liability increases 4.50% per year.

Does not reflect adjustment to set fiscal 2007 appropriation to budgeted amount.

Refer to Exhibit G for information on payment in fiscal year 2008 and later.

SECTION 3: Supplemental Information for the Swampscott Contributory Retirement System

EXHIBIT G Funding Schedule

(1) Fiscal year ended June 30	(2) Employer normal cost	(3) Amortization of 2002 ERI	(4) Amortization of 2003 ERI	(5) Amortization of remaining unfunded liability	(6) Total plan cost: (2) + (3) + (4) + (5)	(7) Total Unfunded Accrued Liability
2007	\$899,356	\$131,261	\$40,333	\$1,598,170	\$2,669,120	\$28,672,097
2008	939,827	131,261	40,333	1,793,974	2,905,395	29,054,520
2009	982,119	131,261	40,333	1,874,703	3,028,416	29,256,068
2010	1,026,314	131,261	40,333	1,959,065	3,156,973	29,386,552
2011	1,072,498	131,261	40,333	2,047,223	3,291,315	29,436,364
2012	1,120,760	131,261	40,333	2,139,348	3,431,702	29,394,951
2013	1,171,194	131,261	40,333	2,235,619	3,578,407	29,250,730
2014	1,223,898	131,261	40,333	2,336,222	3,731,714	28,990,998
2015	1,278,973	131,261	40,333	2,441,352	3,891,919	28,601,837
2016	1,336,527	131,261	40,333	2,551,213	4,059,334	28,068,002
2017	1,396,671	131,261	40,333	2,666,018	4,234,283	27,372,810
2018	1,459,521	131,261	40,333	2,785,989	4,417,104	26,498,015
2019	1,525,199	131,261	40,333	2,911,359	4,608,152	25,423,666
2020	1,593,833	-	40,333	3,042,370	4,676,536	24,127,958
2021	1,665,555	-	-	3,179,277	4,844,832	22,728,869
2022	1,740,505	-	-	3,322,344	5,062,849	21,113,559
2023	1,818,828	-	-	3,471,849	5,290,677	19,214,512
2024	1,900,675	-	-	3,628,082	5,528,757	17,002,076
2025	1,986,205	-	-	3,791,346	5,777,551	14,443,914
2026	2,075,584	-	-	3,961,957	6,037,541	11,504,773
2027	2,168,985	-	-	4,140,245	6,309,230	8,146,241
2028	2,266,589	-	-	4,326,556	6,593,145	4,326,476

Notes: Recommended contributions are assumed to be paid on July 1.

(2) and (5) increase at 4.50% per year.

Assumes contribution of budgeted amount for fiscal year 2007.

#### SECTION 3: Supplemental Information for the Swampscott Contributory Retirement System

#### **EXHIBIT H**

#### **Definitions of Pension Terms**

The following list defines certain technical terms for the convenience of the reader:

# Assumptions or actuarial assumptions:

The estimates on which the cost of the Plan is calculated including:

- (a) <u>Investment return</u> the rate of investment yield that the Plan will earn over the long-term future;
- (b) <u>Mortality rates</u> the death rates of employees and pensioners; life expectancy is based on these rates;
- (c) <u>Retirement rates</u> the rate or probability of retirement at a given age;
- (d) <u>Turnover rates</u> the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement.

Normal cost:

The amount of contributions required to fund the benefit allocated to the current year of service.

Actuarial accrued liability for actives:

The equivalent of the accumulated normal costs allocated to the years before the valuation date.

Actuarial accrued liability for pensioners:

The single sum value of lifetime benefits to existing pensioners. This sum takes account of life expectancies appropriate to the ages of the pensioners and the interest that the sum is expected to earn before it is entirely paid out in benefits.

Unfunded actuarial accrued liability:

The extent to which the actuarial accrued liability of the Plan exceeds the assets of the Plan. There are many approaches to paying off the unfunded actuarial accrued liability, from meeting the interest accrual only to amortizing it over a specific period of time.

## SECTION 3: Supplemental Information for the Swampscott Contributory Retirement System

**Amortization of the unfunded** 

actuarial accrued liability: Payments made over a period of years equal in value to the Plan's unfunded actuarial

accrued liability.

**Investment return:** The rate of earnings of the Plan from its investments, including interest, dividends and

capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one

year to the next.

EX	EXHIBIT I						
Su	Summary of Actuarial Valuation Results						
Th	e valuation was made with respect to the following data supplied to us:						
1.	Retired participants as of the valuation date (including 27 beneficiaries in pay status)		225				
2.	Participants active during the year ended December 31, 2005 with total accumulated contributions of \$7,068,164 and projected payroll of \$10,011,387		282				
3.	Inactive participants with a vested right to a return of their employee contributions or a deferred or immediate benefit as of December 31, 2005		215				
Th	e actuarial factors as of January 1, 2006 are as follows:						
1.	Normal cost, including administrative expenses		\$1,755,571				
2.	Expected employee contributions		-875,792				
3.	Employer normal cost: $(1) + (2)$		879,779				
4.	Actuarial accrued liability		58,082,162				
	Retired participants and beneficiaries	\$36,076,584					
	Active participants	21,691,739					
	Inactive participants with a vested right to a return of their employee contributions or a deferred or immediate benefit	313,839					
5.	Actuarial value of assets (\$28,839,050 at market value)		30,492,424				
6.	Unfunded actuarial accrued liability		\$27,589,738				
Th	e determination of the recommended contribution is as follows:						
1.	Employer normal cost projected to July 1, 2006		\$899,350				
2.	Projected unfunded actuarial accrued liability		28,672,097				
3.	Payment on projected unfunded actuarial accrued liability		1,880,864				
4.	Total preliminary recommended contribution: $(1) + (3)$		\$2,780,220				
5.	Budgeted appropriation fiscal 2007 based on January 1, 2004 valuation		\$2,669,12				
6.	Projected payroll		\$10,234,16				

Note: Recommended contributions are assumed to be paid on July 1.



EXHIBIT II

Supplementary Information Required by the GASB – Schedule of Employer Contributions

Plan Year Ended December 31	Annual Required Contributions	Actual Contributions	Percentage Contributed
1998	\$1,664,516	\$1,664,516	100.0%
1999	1,772,327	1,772,327	100.0%
2000	1,845,975	1,845,975	100.0%
2001	1,932,401	1,932,401	100.0%
2002	2,022,976	2,022,976	100.0%
2003	2,114,983	2,114,983	100.0%
2004	2,347,756	2,347,756	100.0%
2005	2,561,571	2,561,571	100.0%

EXHIBIT III

Supplementary Information Required by the GASB – Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll [(b) - (a)] / (c)
01/01/1996	\$15,208,683	\$29,272,257	\$14,063,574	51.96%	\$6,481,290	216.99%
01/01/1998	16,938,035	36,193,389	19,255,354	46.80%	6,318,850	304.73%
01/01/2000	27,150,564	40,926,782	13,776,218	66.34%	7,516,008	183.29%
01/01/2002	29,429,260	47,842,001	18,412,741	61.51%	8,337,379	220.85%
01/01/2004	28,721,832	52,826,739	24,104,907	54.37%	9,044,330	266.52%
01/01/2006	30,492,424	58,082,162	27,589,738	52.50%	10,011,387	275.58%

EXHIBIT IV			
Supplementary	/ Information Red	quired by	the GASB

Valuation date	January 1, 2006			
Actuarial cost method	Entry Age Normal Cost Method			
Amortization method	Approximate level percent of payroll based on 4.5% increases for non ERI liability and level dollar payments on ERI liability.  As of July 1, 2006, 13 years remaining for the 2002 ERI, 14 years remaining for the 2003 ERI and 22 years remaining for the remaining unfunded liability.			
Remaining amortization period				
Asset valuation method	20% smoothing of investment returns greater (less) than expected			
Actuarial assumptions:				
Investment rate of return	8.00%			
Projected salary increases	3.50% for 2006, $4.00%$ for 2007, $4.50%$ for 2008 and $5.00%$ per year for Group 1; $5.00%$ per year in all years for Group 4			
Cost of living adjustments	3.00% of first \$12,000 of retirement income			
Plan membership:				
Retired participants and beneficiaries receiving benefits	225			
Inactive participants entitled to, but not yet receiving benefits	215			
Active participants	<u>282</u>			
Total	722			

#### **EXHIBIT V**

## **Actuarial Assumptions and Actuarial Cost Method**

# **Mortality rates:**

Healthy: RP-2000 Combined Healthy Mortality Table (previously, 1983 Group Annuity

Mortality Table)

Disabled: RP-2000 Combined Healthy Mortality Table set forward five years (previously, 1983

Group Annuity Mortality Table set forward 10 years)

<b>Termination rates before retirement:</b>		G	Groups 1 and 2 - Rate (%)		
		Moi	tality	Disability	Withdrawal
	Age	Male	Female		
	20	0.03	0.02	0.06	7.94
	25	0.04	0.02	0.09	7.72
	30	0.04	0.03	0.11	7.22
	35	0.08	0.05	0.15	6.28
	40	0.11	0.07	0.22	5.15
	45	0.15	0.11	0.36	3.98
	50	0.21	0.17	0.61	2.56
	55	0.36	0.27	1.01	0.94
	60	0.67	0.51	1.63	

Notes: 55% of the disability rates shown represent accidental disability.

40% of the accidental disabilities will die from the same cause as the disability.

55% of the death rates shown represent accidental death

**SECTION 4: Reporting Information for the Swampscott Contributory Retirement System** 

	Group 4 - Rate (%)			
	Mor	tality	Disability	Withdrawal
Age	Male	Female		
20	0.03	0.02	0.12	
25	0.04	0.02	0.17	
30	0.04	0.03	0.22	
35	0.08	0.05	0.29	
40	0.11	0.07	0.44	
45	0.15	0.11	0.72	
50	0.21	0.17	1.21	
55	0.36	0.27	2.02	
60	0.67	0.51	3.25	

Notes: 90% of the disability rates shown represent accidental disability.

40% of the accidental disabilities will die from the same cause as the disability. 90% of the death rates shown represent accidental death.

#### **Retirement rates:**

# Rate per year (%)

	,	
Age	Groups 1 and 2	Group 4
50		10.0
51- 54		2.0
55	10.0	25.0
56 – 59	5.0	10.0
60	5.0	25.0
61	5.0	100.0
62	25.0	
63 – 66	10.0	
67	100.0	

**Unknown data for participants:** 

Same as those exhibited by participants with similar known characteristics. If not specified, participants are assumed to be male.

**2005 Salary:** 2005 salary as provided in the data. For employees with less than 1 year of service,

salaries are annualized.

**Service:** Service is elapsed time from "adjusted" date of hire as reported in the data.

**Age of spouse:** Female spouses 3 years younger than their spouses.

**Percent married:** 75%

**Net investment return:** 8.0%, net of investment expenses

**Interest on Employee Contributions: 3.5%** 

Salary Increases:	Year	Group 1	Group 4
	2006	3.50%	5.00%
	2007	4.00%	5.00%
	2008	4.50%	5.00%
	2009 and later	5.00%	5.00%
	Includes ali	lowance for inflation.	

**Administrative expenses**: \$175,000 for calendar 2006 (previously, \$160,00 for calendar 2004)

**Cost-of-living increases**: 3% annually of the first \$12,000 of retirement income.

**Actuarial value of assets**: A preliminary actuarial value is first determined by taking the actuarial value of assets

(previously, 5.50% for all years)

at the beginning of the year and adding assumed investment earnings (at the assumed actuarial rate of return) and the net new money during the year (contributions less benefit payments). Twenty percent of the difference between the market value of assets and the preliminary actuarial value is added to the preliminary actuarial value. In order that the actuarial value not differ too significantly from the market value of assets, the final actuarial value of assets must be within 20% of the market value of

assets.

**Actuarial cost method:** Entry Age Normal Actuarial Cost Method. Entry Age is the age of the participant at

"Adjusted" Date of Hire. Normal Cost and Actuarial Accrued Liability are calculated

on an individual basis and are allocated by salary.

#### **EXHIBIT VI**

## **Summary of Plan Provisions**

This exhibit summarizes the major provisions of Chapter 32 of the Laws of Massachusetts. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

Plan Year:

January 1 – December 31

#### **Retirement Benefits**

Employees covered by the Contributory Retirement Law are classified into one of four groups depending on job classification. Group 1 comprises most positions in state and local government and is the general category of public employees. Group 4 comprises mainly police and firefighters. Group 2 is for other specified hazardous occupations. (Officers and inspectors of the State Police are classified as Group 3 and are not included in this System.)

The annual amount of the retirement allowance is based on the member's final threeyear average salary, multiplied by the number of years and full months of creditable service at the time of retirement and multiplied by a percentage according to the following table, based on the age of the member at retirement:

# Age Last Birthday at Date of Retirement

Percent	Group 1	Group 2	Group 4
2.5	65 or over	60 or over	55 or over
2.4	64	59	54
2.3	63	58	53
2.2	62	57	52
2.1	61	56	51
2.0	60	55	50
1.9	59		49
1.8	58		48
1.7	57		47
1.6	56		46
1.5	55		45

A member's final three-year average salary is defined as the greater of the highest consecutive three-year average annual rate of regular compensation and the average annual rate of regular compensation received during the last three years of creditable service prior to retirement. The \$30,000 cap on salary used in a benefit determination for any employee hired after January 1, 1979 has been removed.

The maximum annual amount of the retirement allowance is 80 percent of the member's final three-year average salary. Any member who is a veteran also receives an additional yearly retirement allowance of \$15 per year of creditable service, not exceeding \$300. The veteran allowance is paid in addition to the 80 percent maximum.

Members of Group 1, 2 or 4 may retire upon the attainment of age 55. For retirement at ages below 55, twenty years of creditable service is required.

Members of Group 1 or 2 who terminate before age 55 with ten or more years of creditable service are eligible for a retirement allowance upon the attainment of age 55 (provided they have not withdrawn their accumulated deductions from the Annuity Savings Fund of the system).

# **Employee Contributions**

- > Employees hired before January 1, 1975 contribute 5 percent of their salary;
- > Employees hired after December 31, 1974 contribute 7 percent;
- > Employees hired after January 1, 1984 contribute 8 percent;
- > Employees hired after July 1, 1996 contribute 9 percent.

In addition, employees hired after December 31, 1978 contribute an additional 2 percent of salary in excess of \$30,000.

Employees hired after 1983 who leave with less than five years of credited service receive no interest on their contributions and employees who leave with five but less than ten years receive one-half the rate of regular interest otherwise payable.

# **Ordinary Disability Benefits**

A member who is unable to perform his/her job due to a non-occupational disability will receive a retirement allowance if he has ten or more years of creditable service and has not reached age 55. The annual amount of such allowance shall be

determined as if the member retired for superannuation at age 55, based on the amount of creditable service at the date of disability. For veterans, there is a minimum benefit of 50 percent of the member's most recent year's pay plus an annuity based on his/her own contributions.

#### **Accidental Disability Benefit**

For a job-connected disability, the benefit is 72 percent of the member's most recent annual pay plus an annuity based on his/her own contributions, plus additional amounts for surviving children. Benefits are capped at 75 percent of annual rate of regular compensation for employees who become members after January 1, 1988.

#### **Death Benefits**

In general, the beneficiary of an employee who dies in active service will receive a refund of the employee's own contributions. Alternatively, if the employee were eligible to retire on the date of his/her death, a spouse's benefit will be paid the full amount the employee would have received under Option C (previously, two-thirds of the amount). The surviving spouse of a member who dies with two or more years of credited service has the option of a refund of the employee's contributions or a monthly benefit regardless of eligibility to retire, if they were married for at least one year. There is also a minimum widow's pension of \$500 per month, and there are additional amounts for surviving children.

If an employee's death is job-connected, the spouse will receive 72 percent of the member's most recent annual pay, in addition to a refund of the member's accumulated deductions, plus additional amounts for surviving children. However, in accordance with Section 100 of Chapter 32, the surviving spouse of a police officer, firefighter or corrections officer is killed in the line of duty will be eligible to receive an annual benefit equal to the maximum salary held by the member at the time of death.

# "Heart And Lung Law" And Cancer Presumption

Any case of hypertension or heart disease resulting in total or partial disability or death to a uniformed fireman or permanent member of a police department is presumed to have been suffered in the line of duty, unless the contrary is shown by competent evidence. Any case of disease of the lungs or respiratory tract resulting in

SECTION 4: Reporting Information for the Swampscott Contributory Retirement System

	total disability or death to a uniformed fireman is presumed to have been suffered in the line of duty, unless the contrary is shown by competent evidence. There is an additional presumption for uniformed firemen that certain types of cancer are jobrelated if onset occurs while actively employed or within five years of retirement.
Options	
	Members may elect to receive a full retirement allowance payable for life under Option A. Under Option B a member may elect to receive a lower monthly allowance in exchange for a guarantee that at his/her death any contributions not expended for annuity payments will be refunded to his/her beneficiary. Option C allows the member to take a lesser retirement allowance in exchange for providing his/her survivor with two-thirds of the lesser amount. Option C pensioners will have their benefits converted from a reduced to a full retirement if the beneficiary predeceases the retiree.
<b>Post-Retirement Benefits</b>	
	The Board has adopted the provisions of Section 51 Chapter 127 of the Acts of 1999, which provide that the Retirement Board may approve an annual COLA in excess of the Consumer Price Index but not to exceed a 3% COLA on the first \$12,000 of a retirement allowance. Cost-of-living increases granted prior to July 1, 1998 are reimbursed by the Commonwealth and not reflected in this report.
<b>Changes in Plan Provisions:</b>	There have been no changes in plan provisions since the last valuation.